

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A reloading system for placing an array of pipette tips in an empty pipette holder, the pipette tips each having a lower tapered tip end and an upper mounting sleeve and the pipette holder having a generally flat support surface provided with an array of openings adapted to receive and hold the array of tips in a tip support position, said system comprising:

a transfer tray-plate having a main body portion of generally uniform thickness and an array of apertures arranged to align with the array of openings in the pipette holder, each of the apertures having a peripheral edge portion including a plurality of flexible lips extending radially inwardly from the edges of the apertures, said flexible lips being substantially thinner than the thickness of said main body portion, said lips adapted to hold-support a pipette tip by its mounting sleeve with the tip end extending downwardly from the underside of the transfer-tray plate; and,

a push plate adapted to overlie the transfer tray-plate and to engage the mounting sleeves of the tips and push the same through the apertures, past and separated completely from the transfer tray-flexible lips and into the tip support position on the pipette holder.

2. (Cancelled)

3. (Cancelled)

4. (Cancelled)

5. (Currently Amended) The system as set forth in claim 4-1 wherein the main body portion of said transfer tray-plate has a generally flat underside and said flexible lips are generally coplanar with said flat underside.

6. (Currently Amended) The system as set forth in claim 3-1 comprising three flexible lips for each aperture, said lips positioned equally spaced around the aperture.

7. (Currently Amended) The system as set forth in claim 1 including a support structure depending downwardly from the underside of the transfer tray-plate and engageable with the flat support surface of the pipette holder to hold the tips above the support position with the tip ends extending into the pipette holder openings.

8. (Original) The system as set forth in claim 6 wherein the radially inner edges of the lips comprise circular arcs defining a diameter approximately equal to the diameter of the openings in the pipette holder.

9. (Currently Amended) The system as set forth in claim 8 wherein said support structure comprises a plurality of legs extending generally perpendicular to the transfer tray-plate and positioned between adjacent apertures.

10. (Original) The system as set forth in claim 1 wherein the push plate comprises an upper body having a generally planar undersurface and an array of fingers extending downwardly from the undersurface arranged to align with and extend into the mounting sleeves of the tips

11. (Currently Amended) The system as set forth in claim 10 wherein each of said fingers comprises a tapered distal end sized to extend into the mounting sleeve of a tip, and a generally cylindrical proximal end sized to pass through a transfer tray aperture and forming at the juncture with the distal end a shoulder adapted to

engage the upper edge of the pipette tip mounting sleeve and push said upper edge past the flexible lips.

12. (Cancelled)

13. (Currently Amended) The method as set forth in claim 12 17 wherein the pipette tips are of the type having a wherein the tapered tip end and an the upper mounting sleeve defining a are separated by an intermediate shoulder with the tip end and wherein said including the step of supporting step comprises engaging the shoulders of the mounting sleeves of the tips by their intermediate shoulders on the peripheries flexible peripheral edge portions of the apertures in the transfer device plate.

14. (Cancelled)

15. (Cancelled)

16. (Cancelled)

17. (Currently Amended) A method for reloading an empty pipette tip holder with an array of pipette tips, the pipette tips each having a lower tapered tip end and an upper mounting sleeve with a generally flat upper end and the pipette tip holder having a generally flat support surface provided with an array of openings adapted to receive and loosely hold the array of tips in a tip support position, said method comprising the steps of:

(1) providing a transfer tray-plate having a generally flat body with an array of apertures arranged to align with the array of openings in the holder;

(2) forming each of the apertures with a flexible peripheral edge portion substantially thinner than the thickness of the flat body and sized to hold-support a pipette tip by its mounting sleeve with the tip end extending downwardly from the underside of the transfer tray-plate body;

(3) engaging the mounting sleeves of the tips with a push plate having a plurality of downwardly depending protrusions corresponding to and alignable with the pipette tips in the transfer tray plate, said protrusions including shoulders adapted to engage the upper ends of said upper mounting sleeves; and,

(4) pushing the tips with the push plate and the push plate protrusions through the apertures and causing the flexible edge portions to deflect downwardly until upper ends of the tips and the shoulders are, past the edge portions and the tips are free of the transfer tray plate to drop into the tip support position on the pipette holder.

18. (Original) The method as set forth in claim 17 comprising, prior to the pushing step, the step of holding the pipette tips above the support position with a support structure depending downwardly from the underside of the transfer tray and in engagement with the flat support surface of the pipette holder.

19. (Original) The method as set forth in claim 18 wherein the holding step comprises supporting the pipette tips in the transfer tray with the tip ends extending downwardly past the support structure.

20. (New) A reloading system for holding a plurality of tiers of pipette tip arrays in vertically stacked orientation and for placing one of said arrays of pipette tips in an empty pipette holder, the pipette tips each having a lower tapered tip end and an upper mounting sleeve and the pipette holder having a generally flat support surface provided with an array of openings adapted to receive and hold the array of tips in a tip support position, said system comprising:

a transfer plate for each array having an array of apertures arranged to align with the array of openings in the pipette holder, each of the apertures having a peripheral edge portion supporting a pipette tip by its mounting sleeve with the tip end extending downwardly from the underside of the transfer plate, and a support structure formed integrally with and depending downwardly from the underside of the transfer

plate and engageable with the transfer plate of the tier immediately below in the stacked orientation to prevent supporting contact between vertically adjacent tips; and,

a push plate adapted to overlie the transfer plate and to engage the mounting sleeves of the tips and push the same through the apertures past the peripheral edge portions and separated completely from the transfer plate and into the tip support position on the pipette holder.

21. (New) A method for holding a plurality of tiers of pipette tip arrays in vertically stacked orientation and for reloading a pipette tip holder with a tier of tips, said tip holder having a generally flat support surface provided with an array of openings adapted to receive and hold the array of tips in said tier in a tip support position with the tip ends pointing downwardly, said method comprising the steps of:

(1) supporting each array of tips in an array of apertures on a transfer plate, said apertures arranged to align with the array of openings in the pipette tip holder;

(2) supporting all but the lowermost transfer plate on the adjacent transfer plate of the tier immediately below with a transfer plate support structure depending downwardly from the underside of the transfer plate to prevent supporting contact between vertically adjacent tips;

(3) positioning the transfer plate of the uppermost tier in the stack and the array of tips supported thereon over the holder with the tip ends extending into the openings and the support structure preventing supporting contact of the tips by the tip holder; and,

(4) pushing the tips downwardly through the transfer plate and into the tip support position on the tip holder.